

SEQUENCE LISTING

<110> Gerald, Christophe P.G.
 Jones, Kenneth A.
 Bonini, James A.
 Borowsky, Beth E.
 Craig, Douglas A.

<120> DNA Encoding Mammalian Neuropeptide FF (NPFF) Receptors
 And Uses Thereof

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<150> 09/405,558

<151> 1999-09-24

<150> 09/255,368

<151> 1999-02-22

<150> 09/161,113

<151> 1998-09-25

<160> 71

<170> PatentIn Ver. 2.1

<210> 1

<211> 1410

<212> DNA

<213> Rattus norvegicus

<400> 1

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<210> 2

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<212> PRT

<213> Rattus norvegicus

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 20 25 30

Ser Ser Tyr Tyr Gln His Ser Ser Pro Val Ala Ala Met Phe Ile Ala
 35 40 45

Ala Tyr Val Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val
 50 55 60

Cys Phe Ile Val Leu Lys Asn Arg His Met Arg Thr Val Thr Asn Met
 65 70 75 80

Phe Ile Leu Asn Leu Ala Val Ser Asp Leu Leu Val Gly Ile Phe Cys
 85 90 95

Met Pro Thr Thr Leu Val Asp Asn Leu Ile Thr Gly Trp Pro Phe Asp
 100 105 110

Asn Ala Thr Cys Lys Met Ser Gly Leu Val Gln Gly Met Ser Val Ser
 115 120 125

Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Glu Arg Phe Arg Cys
 130 135 140

Ile Val His Pro Phe Arg Glu Lys Leu Thr Leu Arg Lys Ala Leu Phe
 145 150 155 160

Thr	Ile	Ala	Val	Ile	Trp	Ala	Leu	Ala	Leu	Leu	Ile	Met	Cys	Pro	Ser	165	170	175
Ala	Val	Thr	Leu	Thr	Val	Thr	Arg	Glu	Glu	His	His	Phe	Met	Leu	Asp	180	185	190
Ala	Arg	Asn	Arg	Ser	Tyr	Pro	Leu	Tyr	Ser	Cys	Trp	Glu	Ala	Trp	Pro	195	200	205
Glu	Lys	Gly	Met	Arg	Lys	Val	Tyr	Thr	Ala	Val	Leu	Phe	Ala	His	Ile	210	215	220
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Arg	Lys	Leu	Cys	Gln	Ala	Pro	Gly	Pro	Ala	Arg	Asp	Thr	Glu	Glu	Ala	245	250	255
Val	Ala	Glu	Gly	Gly	Arg	Thr	Ser	Arg	Arg	Arg	Ala	Arg	Val	Val	His	260	265	270
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Trp	Val	Leu	Leu	Leu	Leu	Ile	Asp	Tyr	Gly	Glu	Leu	Ser	Glu	Leu	Gln	290	295	300
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Phe	Phe	His	Ser	Ser	Ala	Asn	Pro	Ile	Ile	Tyr	Gly	Tyr	Phe	Asn	Glu	325	330	335
Asn	Phe	Arg	Arg	Gly	Phe	Gln	Ala	Ala	Phe	Arg	Ala	Gln	Leu	Cys	Trp	340	345	350
Pro	Pro	Trp	Ala	Ala	His	Lys	Gln	Ala	Tyr	Ser	Glu	Arg	Pro	Asn	Arg	355	360	365
Leu	Leu	Arg	Arg	Arg	Val	Val	Val	Asp	Val	Gln	Pro	Ser	Asp	Ser	Gly	370	375	380
Leu	Pro	Ser	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Val	Pro	Gly	Pro	Gly	Arg	385	390	395
Leu	Pro	Leu	Arg	Asn	Gly	Arg	Val	Ala	His	Gln	Asp	Gly	Pro	Gly	Glu	405	410	415

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 <213> Homo sapiens

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<210> 4
 <211> 66
 <212> PRT
 <213> Homo sapiens

<400> 4
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 Thr Asn Thr Glu Ala Thr Pro Ala Thr Asn Leu Thr Phe Ser Ser Tyr
 20 25 30
 Tyr Gln His Thr Ser Pro Val Ala Ala Met Phe Ile Val Ala Tyr Ala
 35 40 45
 Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val Cys Phe Ile
 50 55 60
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<210> 5
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 <213> Homo sapiens

<400> 5

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gatttactag ttggcatatt ctgcatgcct ataacactgc tggacaatat tatagcagga 360
tggccatttg gaaacacgat gtgcaagatc agtggattgg tccagggaat atctgtcgca 420
gcttcagtct ttacgttagt tgcaattgct gtagataggt tccagtgtgt ggtctaccct 480
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gccatcacca ttatgtctcc atctgcagta atgttacatg tgcaagaaga aaaatattac 600
cgagtggagc tcaactccca gaataaaacc agtccagtct actggtgccg ggaagactgg 660
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<210> 6
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<212> PRT
<213> Homo sapiens

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Thr Tyr Val Asn Tyr Tyr Leu His Gln Pro Gln Val Ala Ala Ile Phe
      35              40              45

Ile Ile Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Met Gly Asn Thr
      50              55              60

Val Val Cys Phe Ile Val Met Arg Asn Lys His Met His Thr Val Thr
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Asn Leu Phe Ile Leu Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile
      85              90              95

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		115					120					125					
Val	Ala	Ala	Ser	Val	Phe	Thr	Leu	Val	Ala	Ile	Ala	Val	Asp	Arg	Phe		
		130				135					140						
Gln	Cys	Val	Val	Tyr	Pro	Phe	Lys	Pro	Lys	Leu	Thr	Ile	Lys	Thr	Ala		
145					150					155					160		
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				165					170					175			
Pro	Ser	Ala	Val	Met	Leu	His	Val	Gln	Glu	Glu	Lys	Tyr	Tyr	Arg	Val		
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		275					280					285					
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305					310					315					320		
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				325					330					335			
Asn	Glu	Asn	Phe	Arg	Arg	Gly	Phe	Gln	Glu	Ala	Phe	Gln	Leu	Gln	Leu		
			340					345					350				

Cys Gln Lys Arg Ala Lys Pro Met Glu Ala Tyr Ala Leu Lys Ala Lys
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Ser His Val Leu Ile Asn Thr Ser Asn Gln Leu Val Gln Glu Ser Thr
 370 375 380

Phe Gln Asn Pro His Gly Glu Thr Leu Leu Tyr Arg Lys Ser Ala Glu
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Ser Ser Glu Ile
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<211> 1293

<212> DNA

<213> Homo sapiens

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<210> 8

<211> 430

<212> PRT

<213> Homo sapiens

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Ser	Ser	Tyr	Tyr	Gln	His	Thr	Ser	Pro	Val	Ala	Ala	Met	Phe	Ile	Val	
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Ala	Tyr	Ala	Leu	Ile	Phe	Leu	Leu	Cys	Met	Val	Gly	Asn	Thr	Leu	Val	
	50					55					60					
Cys	Phe	Ile	Val	Leu	Lys	Asn	Arg	His	Met	His	Thr	Val	Thr	Asn	Met	
65					70					75					80	
Phe	Ile	Leu	Asn	Leu	Ala	Val	Ser	Asp	Leu	Leu	Val	Gly	Ile	Phe	Cys	
			85						90					95		
Met	Pro	Thr	Thr	Leu	Val	Asp	Asn	Leu	Ile	Thr	Gly	Trp	Pro	Phe	Asp	
			100					105						110		
Asn	Ala	Thr	Cys	Lys	Met	Ser	Gly	Leu	Val	Gln	Gly	Met	Ser	Val	Ser	
		115					120					125				
Ala	Ser	Val	Phe	Thr	Leu	Val	Ala	Ile	Ala	Val	Glu	Arg	Phe	Arg	Cys	
	130					135					140					
Ile	Val	His	Pro	Phe	Arg	Glu	Lys	Leu	Thr	Leu	Arg	Lys	Ala	Leu	Val	
145					150					155					160	
Thr	Ile	Ala	Val	Ile	Trp	Ala	Leu	Ala	Leu	Leu	Ile	Met	Cys	Pro	Ser	
			165						170					175		
Ala	Val	Thr	Leu	Thr	Val	Thr	Arg	Glu	Glu	His	His	Phe	Met	Val	Asp	
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Ala	Arg	Asn	Arg	Ser	Tyr	Pro	Leu	Tyr	Ser	Cys	Trp	Glu	Ala	Trp	Pro	
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Glu	Lys	Gly	Met	Arg	Arg	Val	Tyr	Thr	Thr	Val	Leu	Phe	Ser	His	Ile	
	210					215					220					
Tyr	Leu	Ala	Pro	Leu	Ala	Leu	Ile	Val	Val	Met	Tyr	Ala	Arg	Ile	Ala	
225					230					235					240	

Arg	Lys	Leu	Cys	Gln	Ala	Pro	Gly	Pro	Ala	Pro	Gly	Gly	Glu	Glu	Ala
				245					250					255	
Ala	Asp	Pro	Arg	Ala	Ser	Arg	Arg	Arg	Ala	Arg	Val	Val	His	Met	Leu
			260					265					270		
Val	Met	Val	Ala	Leu	Phe	Phe	Thr	Leu	Ser	Trp	Leu	Pro	Leu	Trp	Ala
		275					280					285			
Leu	Leu	Leu	Leu	Ile	Asp	Tyr	Gly	Gln	Leu	Ser	Ala	Pro	Gln	Leu	His
	290					295					300				
Leu	Val	Thr	Val	Tyr	Ala	Phe	Pro	Phe	Ala	His	Trp	Leu	Ala	Phe	Phe
305					310					315					320
Asn	Ser	Ser	Ala	Asn	Pro	Ile	Ile	Tyr	Gly	Tyr	Phe	Asn	Glu	Asn	Phe
				325					330					335	
Arg	Arg	Gly	Phe	Gln	Ala	Ala	Phe	Arg	Ala	Arg	Leu	Cys	Pro	Arg	Pro
			340					345					350		
Ser	Gly	Ser	His	Lys	Glu	Ala	Tyr	Ser	Glu	Arg	Pro	Gly	Gly	Leu	Leu
		355					360					365			
His	Arg	Arg	Val	Phe	Val	Val	Val	Arg	Pro	Ser	Asp	Ser	Gly	Leu	Pro
	370					375					380				
Ser	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Ala	Pro	Arg	Pro	Gly	Arg	Leu	Pro
385					390					395					400
Leu	Arg	Asn	Gly	Arg	Val	Ala	His	His	Gly	Leu	Pro	Arg	Glu	Gly	Pro
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<210> 9

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

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<210> 10
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<210> 19

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<210> 21

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<210> 24

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<223> Description of Artificial Sequence: primer/probe

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<210> 26

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<212> DNA

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<212> DNA

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36

<210> 28

<211> 31

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<220>

<223> Description of Artificial Sequence: primer/probe

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31

<210> 29

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 29

ccatcctaatac gactcact atagggc

27

<210> 30

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 30

actcactata gggctcgagc ggc

23

<210> 31

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 31

tgatagtgag ctttggttta aaaggg

26

<210> 32

<211> 26

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 32

gaagatctac accactgtgc tgtttg

26

<210> 33

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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25

<210> 34

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 34

ttgtcatcat gtatggaagg attgg

25

<210> 35

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 35

gaccacacac tggaacctat ctac

24

<210> 36

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 36

gcaattgcaa ctaacgtaaa gactg

25

<210> 37

<211> 37

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 37

tagcaaggat ccgaggttca tcatgaatga gaaatgg

37

<210> 38

<211> 36

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 38

cttcatgaat tcgcgtagta gagttaggat tatcac

36

<210> 39

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 39

ctcctactac caacactcct ctcc

24

<210> 40

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 40

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19

<210> 41

<211> 27

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 41

gatcagtgga ttggtccagg gaatatc

27

<210> 42

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 42

ccaggtagat gttggcaaac agcac

25

<210> 43

<211> 1334

<212> DNA

<213> Rattus norvegicus

<400> 43

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cttcctgatac ttcttctgtg gcatgggtgg aaacactgtc gtttgctttg ttgtaataag 240
gaataggtac atgcacacgg tactaattt cttcatcttc aacctcgcaa taagtgactt 300
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caccattatg acccatctg caatcatgtt acatgtacag gaagaaaaat actaccgtgt 600
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ccaggaaatg aggaggatct acaccaccgt gctctttgcc actatctacc tggctccact 720
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gaaagtcaaa cccaggaag cctatggcct aagagctaaa cgcaacctgg acataaacac 1140
atctggcctg ttggtccatg aacctgcata tcaaaaccca agtggggaaa acttgggatg 1200
tagaaaaagt gcagacaatc ccacacagga atccttgatg gaggaaacgg gagaagctac 1260

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caacagtact gagacttaga aagatagtat gctatccaat gttatatagc atacgaagcc 1320
aactccgatg gctg 1334
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<210> 44
<211> 417
<212> PRT
<213> Rattus norvegicus
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<400> 44

Met Gly Lys Arg Trp Asp Ser Asn Ser Ser Gly Ser Trp Asp His Ile
1 5 10 15

Trp Ser Gly Asn Asp Thr Gln His Pro Trp Tyr Ser Asp Ile Asn Ile
20 25 30

Thr Tyr Met Asn Tyr Tyr Leu His Gln Pro His Val Thr Ala Val Phe
35 40 45

Ile Ser Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Val Gly Asn Thr
50 55 60

Val	Val	Cys	Phe	Val	Val	Ile	Arg	Asn	Arg	Tyr	Met	His	Thr	Val	Thr
65					70					75					80

Asn Phe Phe Ile Phe Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile
85 90 95

Phe Cys Met Pro Ile Thr Leu Leu Asp Asn Ile Ile Ala Gly Trp Pro
100 105 110

Phe Gly Ser Ser Met Cys Lys Ile Ser Gly Leu Val Gln Gly Ile Ser
115 120 125

Val Ala Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Asp Arg Phe
130 135 140

Arg Cys Val Val Tyr Pro Phe Lys Pro Lys Leu Thr Val Lys Thr Ala
145 150 155 160

Phe Val Met Ile Val Ile Ile Trp Gly Leu Ala Ile Thr Ile Met Thr
165 170 175

Pro Ser Ala Ile Met Leu His Val Gln Glu Glu Lys Tyr Tyr Arg Val
180 185 190

Arg Leu Ser Ser His Asn Lys Thr Ser Thr Val Tyr Trp Cys Arg Glu
195 200 205

Asp Trp Pro Asn Gln Glu Met Arg Arg Ile Tyr Thr Thr Val Leu Phe
 210 215 220

Ala Thr Ile Tyr Leu Ala Pro Leu Ser Leu Ile Val Ile Met Tyr Ala
 225 230 235 240

Arg Ile Gly Ala Ser Leu Phe Lys Thr Ser Ala His Ser Thr Gly Lys
 245 250 255

Gln Arg Leu Glu Gln Trp His Val Ser Lys Lys Lys Gln Lys Val Ile
 260 265 270

Lys Met Leu Leu Thr Val Ala Leu Leu Phe Ile Leu Ser Trp Leu Pro
 275 280 285

Leu Trp Thr Leu Met Met Leu Ser Asp Tyr Ala Asp Leu Ser Pro Asn
 290 295 300

Lys Leu Arg Val Ile Asn Ile Tyr Val Tyr Pro Phe Ala His Trp Leu
 305 310 315 320

Ala Phe Cys Asn Ser Ser Val Asn Pro Ile Ile Tyr Gly Phe Phe Asn
 325 330 335

Glu Asn Phe Arg Ser Gly Phe Gln Asp Ala Phe Gln Phe Cys Gln Lys
 340 345 350

Lys Val Lys Pro Gln Glu Ala Tyr Gly Leu Arg Ala Lys Arg Asn Leu
 355 360 365

Asp Ile Asn Thr Ser Gly Leu Leu Val His Glu Pro Ala Ser Gln Asn
 370 375 380

Pro Ser Gly Glu Asn Leu Gly Cys Arg Lys Ser Ala Asp Asn Pro Thr
 385 390 395 400

Gln Glu Ser Leu Met Glu Glu Thr Gly Glu Ala Thr Asn Ser Thr Glu
 405 410 415

Thr

<210> 45

<211> 8

<212> PRT

<213> Rattus norvegicus

<400> 45

Phe Leu Phe Gln Pro Gln Arg Phe

1

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<210> 46

<211> 18

<212> PRT

<213> Rattus norvegicus

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1

5

10

15

Arg Phe

<210> 47

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 47

tttgtcatta ttatgatcat ctgg

24

<210> 48

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 48

aataaaaagc agggccacaa tcag

24

<210> 49

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 49

tcattatttc ctactttctg atc

23

<210> 50

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 50

ctcatttcct ggtttgcca atcc

24

<210> 51

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 51

tcttcaagac ctcagcacac agc

23

<210> 52

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 52

gagctggaaa gcttcttgga aacc

24

<210> 53

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 53

ctggtgtcgg gaggattggc caaaccagga aatgaggagg atctacacc

49

<210> 54

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 54

gcagtgtcaa ccccatcatt tatgg

25

<210> 55

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 55

caaagcaaac gacagtgttt cccacc

26

<210> 56

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 56

agtgaccgtg tgcatgtacc tattcc

26

<210> 57

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 57

ggtgggaaac actgtcgttt gctttgttgt aataaggaat aggtacatgc acacgggtcac 60

<210> 58

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 58

gtcacggatc cagcctctcc ttgataagg tccacc

36

<210> 59

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 59

gtcagccatc gagttggctt cgtatgctat ataacattgg atagc

45

<210> 60

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 60

ctggtcaccg tctacgcctt

20

<210> 61

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 61

ccgcgcgcgga agttct

16

<210> 62

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 62

acagcagcgc caaccccatc at

22

<210> 63

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 63

cctgattgtg gccctgct

18

<210> 64

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 64

catttgagga aaggtcagcg tag

23

<210> 65

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 65

ctcatggctg cccctgtgga ctcaat

26

<210> 66

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 66

gctgtggaaa ggttccgct

19

<210> 67

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 67

cgccttccga aggggtca

17

<210> 68

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 68

atcgtgcacc ctttccgcga gaa

23

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 69

gaggatctac accaccgtgc tatt

24

<210> 70

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 70

gaagccccaa tccttgcata c

21

<210> 71

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 71

tctacctggc tccactctcc ctcattggt

29